

Having described the invention, the following is claimed:

1. A self-contained biological indicator for evaluating the effectiveness of a sterilizer utilizing an anti-microbial gas or liquid fluid, said indicator comprising:
a tubular casing having open ends and defining an interior chamber;
a source of viable microorganisms disposed within said chamber;
a frangible ampule containing a culture medium capable of promoting growth of said microorganism and a detector means capable of reaction with the metabolites of said microorganism to produce a visual indication, said ampule being disposed within said chamber and being operable by pressure applied to an external surface thereof to permit said microorganism and medium to come into contact with each other; and

a cap assembly mounted to each end of said tubular casing, said cap assembly including a telescoping element movable from a first position defining an opening communicating with said chamber and a second position forming a gas/fluid impermeable seal around said chamber, said telescoping element including surface means to engage and crush said ampule as said telescoping member moves from said first position to said second position.

2. A self-contained biological indicator as defined in claim 1, further comprising a barrier element disposed between said cap assembly and said chamber, said barrier element being impermeable to said microorganisms, but permeable to said gas/liquid anti-microbial fluid.

3. A self-contained biological indicator as defined in claim 2, wherein said barrier element is comprised of a sheet of membrane or filter material that is captured between said casing in said cap assembly.

4. A self-contained biological indicator as defined in claim 1, wherein said source of microorganisms includes a paper sheet inoculated with a predetermined concentration of said microorganisms.

5. A self-contained biological indicator as defined in claim 4, wherein said paper sheet is attached to an external surface of said ampule.

6. A self-contained biological indicator as defined in claim 5, wherein said telescoping member is angularly and linearly movable relative to an axis through said casing.

7. A self-contained biological indicator as defined in claim 6, wherein said cap assembly includes a first member mounted to said tubular casing and a second member movably mounted to said first member, wherein said second member is movable on said first member from said first position to said second position.

8. A self-contained biological indicator as defined in claim 7, wherein said second member is rotatable about said axis, and wherein rotation of said second member about said axis causes said second member to move axially toward said first member.

9. A self-contained biological indicator as defined in claim 8, wherein:
said casing is cylindrical in shape and has threaded end portions;
said first member is a cylindrical sleeve threaded onto said threaded end portion of said cylindrical sleeve; and
said second member is a generally cylindrical cap, said cap being mounted to said sleeve on pins extending from said sleeve through slots in said cap.

10. A self-contained biological indicator as defined in claim 9, further comprising an O-ring disposed between said cap and said sleeve that is operable to form a seal between said cap and said sleeve when said cap is in said second position.

11. A self-contained biological indicator as defined in claim 7, wherein said surface means is a punch movable along said axis.